

REMARKS

Four independent claims remain pending (1, 9, 10, and 15).

The examiner has rejected each of the independent claims under 35 USC 103(a) as being unpatentable over Marchetto in view of Kaiser and Jalali. The examiner is urged to reconsider and withdraw the rejection, particularly in light of amendments made to each of the independent claims to clarify the invention.

To explain why the claims are patentable, we refer principally to claim 9, but the differences from the prior art are also present in the other three independent claims. There are at least three differences between the examiner's references and the invention.

1. "connections between any of a plurality of transmitters and any of a plurality of receivers"

The invention calls a plurality of stations connected to a network, and for data to be transmitted "across a plurality of different connections between any of a plurality of transmitters and any of a plurality of receivers" (claim 9). None of the examiner's three references (Marchetto, Kaiser, or Jalali) teach such a network, in which there are a plurality of transmitters and a plurality of receivers and data can be transmitted across a plurality of different pairs of the transmitters and receivers. Marchetto has one transmitter (pager base station) communicating with multiple receivers (mobile paging units). Kaiser and Jalali are the same – one base station communicating with multiple subscriber stations. Jalali includes a figure (Fig. 1) showing a plurality of base stations and a plurality of subscribers stations (cell phones), but each subscriber stations only communicates with one of the base stations at any given time, and the subscriber stations do not communicate with each other. Thus, there are not a "plurality of different connections between any of a plurality of transmitters and any of a plurality of receivers."

2. "using a plurality of carriers"

The invention calls for a transmission between any pair of transmitter and receiver to be made "using a plurality of carriers". This is taught by the examiner's new references, Kaiser and Jalali, but not by his principal reference, Marchetto, which uses a single carrier.

3. adapting transmissions differently for
different pairs of transmitter and receiver

The invention calls for channel adaptation of the multi-carrier transmission to differ for different pairs of transmitter and receiver. Claim 9 expresses this as follows:

adapting the manner in which carriers are used between particular pairs of transmitter and receiver connected to a channel based on characteristics of the channel, wherein the manner in which at least some carriers are used is different for at least some pairs from the manner in which the same carriers are used for at least some other pairs

This is perhaps the most striking difference between the invention and the examiner's references. There is not the slightest suggestion or hint of anything like this in any of the examiner three references.

Adaptation is, of course, a well known technique. As the background of the application explains, it is used in multi-carrier communication, e.g., in point-to-point DSL communications. What is different in the invention is that the adaptation is done differently for different pairs of transmitter and receiver. The same transmitter may use different adaptation depending on which receiver it is transmitting to.

Adaptation results in differences in "the manner in which carriers are used between particular pairs of transmitter and receiver". Thus, for example, the same carrier might have one data rate (or one type of modulation, etc.) for one connection pair, and a different data rate (or a zero data rate, or a different type of modulation, etc.) for another connection pair. Thus, as the claim requires, "the manner in which at least some carriers are used is different for at least some pairs from the manner in which the same carriers are used for at least some other pairs".

None of the examiner's references comes even remotely close to suggesting this feature of the invention. Marchetto teaches channel adaptation, but for a single carrier, and for transmission between the same transmitter and receiver.

Kaiser uses different data rates between the base station and the multiple subscriber stations, but the difference in data rate is not for adaptation to the channel, but to accommodate different data types being transmitted to/from a subscriber station (e.g., voice versus computer data). This is what is taught at the lines referred to by the examiner (col. 54, line 66 – col. 6, line 10). Furthermore, the different data rates are the overall data rates of the connection, and not different data rates assigned to different carriers. Jalali also appears silent on channel adaptation.

The other three independent claims (1, 10, and 15) are similar to claim 9, but are somewhat more specific about how adaptation varies the manner in which the carriers are used for transmission. In claims 1 and 15, changes are made in a carrier's data rate. In claim 10, changes are made to a channel map that "provides for the encoding and modulating for at least some carriers for at least one pair to be different from that used for the same carriers for at least one other pair."

Accordingly, all four independent claims are in condition for allowance.

The remaining claims are all properly dependent on one or more of the independent claims, and thus allowable therewith. Each of the dependent claims adds one or more further limitations that enhance patentability, but those limitations are not presently relied upon. For that reason, and not because applicants agree with the examiner, no rebuttal is offered to the examiner's reasons for rejecting the dependent claims.

Allowance of the application is requested.

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Respectfully submitted,

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